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Dear Colleagues

This guidance is currently under review by the author.

NHS Grampian Guidance For Mental Health Service Staff For The Prescribing Of Vitamin Supplementation During In-Patient Admission (Mental Health) In Patients Identified As Being Alcohol Dependent, Version 5

This document has been risk assessed by the author and deemed appropriate to be used during this review period. A copy of the risk assessment can be provided on request.

It is noted that there is an anticipated availability issue in relation to Pabrinex[®], the main treatment referred to in this guidance. Local interim guidance is currently under development. In the circumstances that Pabrinex[®] is not available the local interim guidance should be referred to regarding alternative treatments including product choice, dosing and administration regime.

If you have any queries regarding this, please do not hesitate to contact the Medicines Guidelines and Policy Group (MGPG) email at gram.mgpg@nhs.scot

Yours sincerely



Lesley Coyle
Chair of Medicines Guidelines and Policy Group (MGPG), NHSG

NHS Grampian Guidance For Mental Health Service Staff For The Prescribing Of Vitamin Supplementation During In-Patient Admission (Mental Health) In Patients Identified As Being Alcohol Dependent

Lead Author/Co-ordinator: Consultant Addiction Psychiatrist, Integrated Alcohol Service	Review Group: Mental Health Operational Medicines Management Group	Approver: Medicine Guidelines and Policies Group
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Signature: 	Signature: 	Signature: 
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Identifier: NHSG/Guid/VitSupMH/MGPG1060	Review Date: October 2022	Date Approved: October 2019
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Uncontrolled When Printed

Version 5

Executive Sign-Off

This document has been endorsed by the Director of Pharmacy and Medicines Management

Signature: 

Title: NHS Grampian Guidance for Mental Health Service Staff For The Prescribing Of Vitamin Supplementation During In-Patient Admission (Mental Health) In Patients Identified As Being Alcohol Dependent
Identifier: NHSG/Guid/VitSupMH/MGPG1060, Version 5
Replaces: NHSG/Guid/VitSupMH/MGPG772, Version 4

Across NHS Boards	Organisation Wide	Directorate	Clinical Service	Sub Department Area
	Yes		Mental health	

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Author: Consultant Addiction Psychiatrist, Integrated Alcohol Service
Subject Prescribing Policy
Key word(s): Alcohol detoxification, detox, withdrawal, vitamin, supplementation, parenteral vitamins, mental health, Pabrinex, Wernicke’s encephalopathy, Wernicke-Korsakoff syndrome, Korsakoff's psychosis, alcoholic encephalopathy, Wernicke's disease, thiamine.

Policy application: NHS Grampian – Mental Health

Purpose: This guidance provides information on the use of parenteral vitamin supplementation during in-patient admission for alcohol detoxification. The guidance includes recommended dosing schedules for the administration of Pabrinex (thiamine, ascorbic acid, nicotinamide, pyridoxine, riboflavin) in the treatment of Wernicke’s Encephalopathy and also for prophylaxis in “at risk” patients

Responsibilities for implementation:

Organisational: Mental Health and Learning Disability Hosted Service and Moray IJB Management Teams

Corporate: Senior Managers
Operational Management Unit (Directorates) Clinical Directors Mental Health & Learning Disability Services and Hosted and Moray Service Managers

Departmental: Clinical Leads

Area: Line Managers

Policy statement: It is the responsibility of individual healthcare professionals and their line managers to ensure that they work with the terms laid down in this guidance and to ensure that staff are working to the most up to date guidance. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions which may affect patient, staff or visitor safety and comfort will be reduced. Supervisory staff at all levels must ensure that healthcare professionals using this guidance act within their own level of competence.

Review: This guidance will be reviewed every three years or sooner if current treatment recommendations change.

Responsible for review of this document:

Mental Health Operational Medicines Management Group

Responsible for ensuring registration of this document on the NHS

Medicines Management Pharmacist, Pharmacy and Medicines Directorate, Westholme

Grampian Information/ Document Silo:

Physical location of the original of this document:

Macrobin Centre, Royal Cornhill Hospital

Job/group title of those who have control over this document:

Consultant Addiction Psychiatrist, Royal Cornhill Hospital

Responsibilities for disseminating document as per distribution list:

Principal Pharmacist, Royal Cornhill Hospital

Revision History:

Revision Date	Approval date of guidance that is being superseded	Summary of Changes (Descriptive summary of the changes made)	Section heading
February 2019	June 2015	Change in Title	Throughout
February 2019	June 2015	Amended wording in Introduction section to better highlight Wernicke's Encephalopathy	Section 1
February 2019	June 2015	Amended description to ensure need is considered in ALL alcohol dependent patients, not just those admitted for alcohol detoxification	Section 1
February 2019	June 2015	Added information on Risk Factors For Wernicke's Encephalopathy	Section 2
February 2019	June 2015	Separated sections on diagnosis and acute management	Sections 2 and 3
February 2019	June 2015	Amended diagnosis information in line with NICE guidance	Section 2
February 2019	June 2015	Removed reference to IVHP and IMHP throughout document and used full name of products to avoid confusion	Throughout
February 2019	June 2015	Updated dosage and administration information for both Pabrinex products in line with SPC	Sections 4 and 5
February 2019	June 2015	Amended duration of treatment in line with current Maudsley recommendation	Section 4
February 2019	June 2015	Added statement on concordance with oral preparation	Section 4 (d)
February 2019	June 2015	Amended information in line with Maudsley and BAP guidelines	Section 5
February 2019	June 2015	Algorithm updated to reflect above changes	Page 5

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Contents	Page no
1) Introduction	1
2) Risk Factors for Wernicke's Encephalopathy	2
3) Diagnosis of Wernicke's Encephalopathy	2
4) Acute Management of Suspected Wernicke's Encephalopathy	2
5) Prophylaxis for In-Patients Considered "At Risk" of Developing Wernicke's Encephalopathy	3
6) Prophylaxis For In-Patients Considered at "Lower Risk" of Developing Wernicke's Encephalopathy	4
7) Vitamin and Mineral Supplementation in Patients with Decompensated Liver Disease ..	4
8) Refeeding Syndrome.....	4
9) Algorithm for Treatment and Prophylaxis of Wernicke's Encephalopathy	5
10) Consultation	6
11) References.....	6

NHS Grampian Guidance for Mental Health Service Staff For The Prescribing Of Vitamin Supplementation During In-Patient Admission (Mental Health) In Patients Identified As Being Alcohol Dependent

1) Introduction

This guidance provides information on the use of parenteral vitamin supplementation during in-patient admission where patients are identified as being alcohol dependent. The guidance includes recommended dosing schedules for the administration of Pabrinex[®] (thiamine, ascorbic acid, nicotinamide, pyridoxine, riboflavin) in:

- i. The acute management of suspected Wernicke's Encephalopathy
- ii. The prophylaxis of Wernicke's Encephalopathy in people assessed as being at risk

Wernicke's Encephalopathy

- Wernicke's Encephalopathy is an acute neurological emergency caused by thiamine deficiency. Poor management can lead to irreversible Alcohol Related Brain Damage (ARBD) in the form of Korsakoff Syndrome (permanent memory impairment, confabulation, confusion and personality changes) and in some cases death. Early recognition and effective management are essential.
- The need for parenteral vitamin supplementation (Pabrinex[®]) should be considered in **all** alcohol dependent in-patients. There is uncertainty regarding the effectiveness of oral vitamin replacement because of limited absorption. It has been shown that oral supplementation has minimal effect on Central Nervous System (CNS) vitamin status, whereas parenteral replacement is rapidly effective.

N.B. There are TWO formulations of Pabrinex[®] injection, one for intravenous (IV) and one for intramuscular (IM) use. These formulations are NOT interchangeable.

Anaphylaxis

- There is a very small risk of anaphylaxis with parenteral vitamin supplementation. It is more likely to occur with the intravenous than intramuscular route. The risks associated with Wernicke's Encephalopathy far outweigh the risk of anaphylaxis and treatment should not be delayed.
- Intravenous administration by dilution in 50mL - 100mL sodium chloride 0.9% or glucose 5% should be infused over 30 minutes. This mitigates against the risk of anaphylaxis as it allows immediate discontinuation should anaphylaxis occur.
- The patient should be observed for signs of anaphylaxis throughout infusion. A doctor must set up and be readily available during the administration of the intravenous infusion.
- Repeated injections of preparations containing high concentrations of thiamine may give rise to anaphylactic shock. Mild allergic reactions such as sneezing or mild asthmatic symptoms are warning signs that further injections may lead to anaphylactic shock. Therefore proceed with caution.
- Parenteral vitamin supplements must only be administered where suitable resuscitation facilities and epinephrine (adrenaline) 1 in 1000 (1mg in 1mL) for intramuscular administration is readily available.

2) Risk Factors for Wernicke's Encephalopathy

In alcohol dependence, thiamine deficiency is secondary to both reduced dietary intake and reduced absorption. Risk factors for developing Wernicke's Encephalopathy include:

- Acute withdrawal from alcohol
- Malnourishment
- Decompensated Liver Disease
- Emergency department attendance
- Hospitalisation for co-morbidity
- Homelessness.

3) Diagnosis of Wernicke's Encephalopathy

A diagnosis of Wernicke's Encephalopathy should be considered in all alcohol dependent patients. The "classical" triad of ophthalmoplegia, ataxia and confusion is rarely present and a presumptive diagnosis should therefore be made where any of the following signs are present:

- Confusion
- Memory disturbance
- Delirium
- Ataxia
- Ophthalmoplegia/Nystagmus
- Unexplained hypotension with hypothermia
- Unconsciousness/coma.

4) Acute Management of Suspected Wernicke's Encephalopathy

Immediate treatment with intravenous thiamine supplementation is required for people with a suspected diagnosis of Wernicke's Encephalopathy:

- a) Administer the contents of **two to three pairs** of Pabrinex® Intravenous High Potency 5mL ampoules (No 1 ampoules and No 2 ampoules) every eight hours by intravenous infusion in 50mL - 100mL sodium chloride 0.9% or glucose 5% over 30 minutes for three to five days.
- b) If no response after three to five days discontinue treatment.
- c) If symptoms respond continue either by intravenous infusion **or** deep intramuscular injection for a further three to five days or for as long as clinical improvement continues as directed below:
 - i) Intravenous Infusion: Give the contents of **one pair** of Pabrinex® Intravenous High Potency 5mL ampoules (No 1 ampoule and No 2 ampoule) once daily by intravenous infusion in 50 - 100mL sodium chloride 0.9% or glucose 5% over 30 minutes

OR

- ii) Deep Intramuscular Injection: Give the contents of **one pair** of Pabrinex[®] Intramuscular High Potency 5mL+2mL ampoules once daily. The contents of one ampoule number 1 and one ampoule number 2 of Pabrinex[®] Intramuscular High Potency (total 7mL) should be drawn up into a syringe to mix them just before use, then injected slowly high into the gluteal muscle, 5cm below the iliac crest.

NB: Before transferring a patient to **Pabrinex[®] Intramuscular High Potency Solution for Injection** check that liver function, platelet count, and INR blood results are satisfactory (i.e. low risk of bleeding).

- d) Thereafter prescribe thiamine tablets 100mg three times a day. Once daily dosing may be an option where concordance is an issue however absorption is less effective when taken as a single dose. Thiamine tablets should be continued until the patient has established abstinence for at least a month and is taking a good diet.

5) Prophylaxis for In-Patients Considered “At Risk” of Developing Wernicke’s Encephalopathy

In the absence of acute symptoms of Wernicke’s Encephalopathy clinicians should consider the potential risk for any in-patient with a diagnosis of alcohol dependence or reporting excessive alcohol intake. Useful flags may include:

- Patients reporting alcohol consumption greater than 20 units per day
- Signs and or symptoms of:
 - Alcohol withdrawal
 - Weight loss or malnutrition
 - Diarrhoea
 - Nausea/vomiting
 - Poor diet
 - Concerns regarding gastrointestinal absorption.

It is generally advised that any in-patients undergoing alcohol detoxification or considered at risk of developing Wernicke’s Encephalopathy should be given parenteral thiamine as prophylaxis as follows:

- a) Obtain baseline bloods to check liver function, platelet count, and INR.
- b) Draw the contents of one ampoule number 1 and one ampoule number 2 of Pabrinex[®] Intramuscular High Potency (total 7mL) into a syringe to mix them just before use, then inject slowly high into the gluteal muscle, 5cm below the iliac crest by deep intramuscular injection.
- c) If blood results are satisfactory (i.e. low risk of bleeding), continue to administer the contents of **one pair** of Pabrinex[®] Intramuscular High Potency ampoules **once daily for a further four days**.
- d) If a risk of bleeding is identified, the intravenous product and route is recommended. Give the contents of **one pair** of Pabrinex[®] Intravenous High Potency 5mL ampoules (No 1 ampoule and No 2 ampoule) by intravenous infusion in 50mL - 100mL sodium chloride 0.9% or glucose 5% over 30 minutes **once daily for a further four days** [Maudsley, 2018].

- e) Thereafter prescribe thiamine 100mg three times a day. Review prior to discharge. Once daily dosing may be an option where concordance is an issue however absorption is less effective when taken as a single dose. National Institute for Health and Care Excellence (NICE) guidance recommends that patients who have a chronic alcohol problem and whose diet may be deficient should be given oral thiamine indefinitely (see [Section 6](#) below)

6) Prophylaxis For In-Patients Considered at “Lower Risk” of Developing Wernicke’s Encephalopathy

NICE guidance recommends offering prophylactic oral thiamine to harmful or dependent drinkers:

- if they are malnourished or at risk of malnourishment or
- if they have decompensated liver disease or
- if they are in acute withdrawal or
- before and during a planned medically assisted alcohol withdrawal.

Prescribe thiamine 100mg three times a day during admission. Review prior to discharge. NICE recommends that patients who have a chronic alcohol problem and whose diet may be deficient should be given oral thiamine indefinitely.

7) Vitamin and Mineral Supplementation in Patients with Decompensated Liver Disease

Seek liver specialist advice for this patient group.

Signs of decompensated liver disease include encephalopathy, ascites, oedema, variceal bleeding and impaired synthetic function (low albumin, elevated bilirubin and prolonged prothrombin time).

8) Refeeding Syndrome

Patients who are at risk of refeeding syndrome should be monitored as per [NHS Grampian refeeding syndrome guidance](#) and any biochemical abnormalities should be corrected. Detailed NHS Grampian guidance for the treatment of [hypokalaemia](#), [hypocalcaemia](#) and [hypomagnesaemia](#) are available on the intranet.

9) Algorithm for Treatment and Prophylaxis of Wernicke's Encephalopathy

This algorithm must be used in conjunction with the NHS Grampian Guidance for Mental Health Service Staff For The Prescribing Of Vitamin Supplementation During In-Patient Admission (Mental Health) In Patients Identified As Being Alcohol Dependent.

Treatment of acute Wernicke's Encephalopathy

Administer **TWO - THREE** pairs of Pabrinex® **INTRAVENOUS** High Potency 5mL ampoules **EVERY EIGHT HOURS** for **THREE TO FIVE DAYS**.
For intravenous administration mix two - three pairs of Pabrinex® **INTRAVENOUS High Potency 5mL ampoules** (No 1 and No 2) with 50mL - 100mL of sodium chloride 0.9% or glucose 5% and infuse over 30 minutes)

No Response after 3-5 days
Discontinue supplementation

Response after 3-5 days – continue with **One pair** of Pabrinex® **INTRAVENOUS** high potency 5mL ampoules (by infusion as above)
OR
One pair of PABRINEX® **INTRAMUSCULAR** High Potency (5mL+2mL) ampoules
Administer **ONCE DAILY** for a further **THREE TO FIVE DAYS** or until clinical improvement ceases.
NB: INTRAMUSCULAR or INTRAVENOUS determined by risk of bleeding. Check blood results

Oral thiamine 100mg three times a day

Prophylaxis in "at-risk" group

ADMINISTER
ONE pair of PABRINEX® **INTRAMUSCULAR high potency** (5mL+2mL) ampoules
OR
ONE pair of PABRINEX® **INTRAVENOUS high potency** 5mL+5mL ampoules
Administer **ONCE DAILY** for **FIVE** days
NB: INTRAMUSCULAR or INTRAVENOUS administration depending on blood results for bleeding risk

Oral thiamine 100mg three times a day

Prophylaxis in "lower risk" group

Oral thiamine 100mg three times a day

N.B. There are TWO formulations of Pabrinex® injection, one for intravenous and one for intramuscular use. These formulations are NOT interchangeable.

- Pabrinex® Intravenous High Potency Injection, Concentrate for Solution for Infusion (Ampoules are numbered 1 and 2. Both are 5mL ampoules)
- Pabrinex® Intramuscular High Potency Injection (Ampoule number 1 = 5mL. Ampoule number 2 = 2mL)

10) Consultation

Mental Health Operational Medicines Management Group
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